

## Chronic Disease Surveillance Report

### Upcoming Events

**Big Sky Pulmonary Conference**  
March 20-22, 2014  
Bozeman, MT

**Asthma and Allergy in  
Pregnancy Webinar**  
January 23, 2014, 12:00pm

See our website for more  
information about these events

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Department of Public Health & Human Services

# Mental Health and Asthma

The Expert Panel Review-3 (EPR-3) Guidelines<sup>1</sup> stress the importance of proper treatment and self-management in order to maintain asthma control. However, a person's mental health including stress, anxiety, and depression can affect their ability to manage their asthma.<sup>2</sup> The EPR-3 Guidelines state "quality of life, perceptions of asthma control, and depression are psychosocial factors worth assessing over time, because they may affect directly the ability to engage in self-management of asthma and affect indirectly asthma morbidity and mortality outcomes. Both asthma-specific and generic quality-of-life measures are associated with patients' perceived control of asthma."

Asthma is associated with reduced health-related quality of life.<sup>3</sup> Furthermore, a summary of the literature suggests that people with both depression and asthma reported poorer health-related quality of life than people with asthma without depression.<sup>4</sup> The severity of depression has also been shown to correlate with asthma control.<sup>5</sup> This report summarizes the self-reported mental health data from adults in Montana with current asthma and the experiences of those with both current asthma and frequent mental distress.

#### Survey methods

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based survey of noninstitutionalized adults aged 18 years and older who are asked about health risks and behaviors. For respondents with children, a child is randomly selected and the respondent is asked about the asthma status of the child. If respondents indicate that they or their child had or currently has asthma they are asked to participate in the Asthma Call-Back Survey (ACBS). If they agree, they are called again and asked more in-depth questions about their experience with asthma and their use of specific asthma medications. A parent or guardian responds for children participating in the ACBS.

Current asthma refers to people who responded "yes" to "Has a health care provider ever told you that you have asthma?" and "Do you still have asthma?" Frequent mental distress refers to people who reported more than 14 days when asked "Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?"

## Measuring Quality of Life

In Montana, adults with current asthma reported fair or poor health, frequent mental distress, and dissatisfaction with life more frequently than did adults without asthma (Figure 1).

### Questions to Ask When Assessing Quality of Life<sup>1</sup>

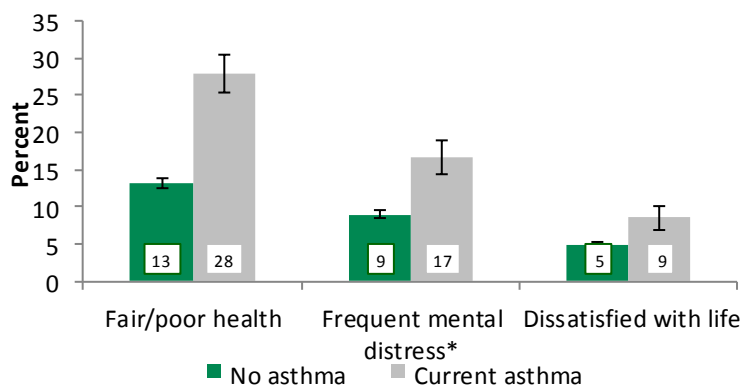
Periodically assess:

- Any work or school missed because of asthma
- Any reduction in usual activities
- Any disturbances in sleep due to asthma
- Any changes in caregivers' activities due to a child's asthma

According to the EPR-3 Guidelines "Asthma symptom frequency has been found to be the most significant determinant of the subjective experience of asthma and perception of quality of life."

Adults with current asthma and frequent mental distress reported that they had five or more asthma attacks in the last three months and woke up more than twice in the last month due to their asthma more frequently than did adults with current asthma without frequent mental distress (Figure 2).

Figure 1. Prevalence of poor health-related quality of life factors by asthma status, Montana, BRFSS, 2007-2010

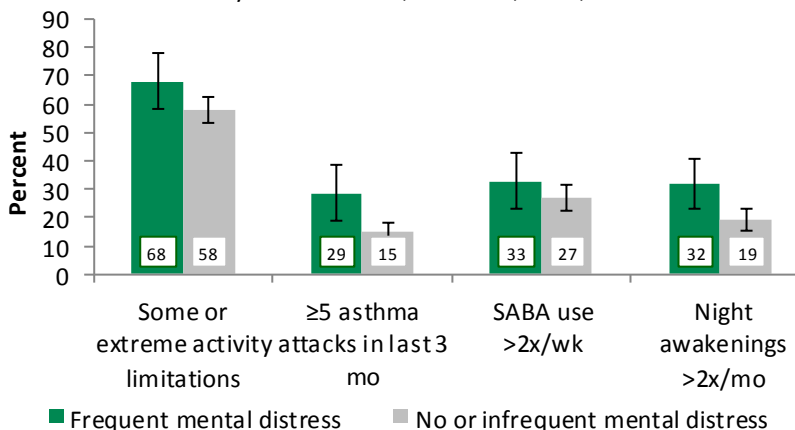


\*14 or more poor mental health days in the last month

Frequent mental distress was defined as experiencing 14 or more poor mental health days in a month. One in six Montana adults (17%) with current asthma reported frequent mental distress (Figure 1). After adjusting for all variables listed in the table (right), Montana adults with asthma were 54% more likely to experience frequent mental distress than were adults without asthma (AOR 1.54, 1.28-1.87).

- A higher prevalence of frequent mental distress was measured among adults with current asthma who were women, had a household income less than \$25,000, had a high school education or less, were not currently working, and smoked tobacco than among adults without these characteristics (Table).
- The prevalence of frequent mental distress was higher among adults with current asthma than those without current asthma for most characteristics (Table).
- Among adults with current asthma, female sex, household income of less than \$25,000, currently not working, and currently smoking were independently associated with frequent mental distress (Table).

Figure 2. Percent of adults with current asthma who reported specific asthma outcomes by mental status, Montana, ACBS, 2006-2010



**Table. Prevalence of frequent mental distress among adults with and without current asthma, Montana, BRFSS, 2007-2010**

		Current asthma				No current asthma			
		%	(95% CI)	AOR*	(95% CI)	%	(95% CI)	AOR*	(95% CI)
Sex	Male	11.9	(8.9-15.0)	Reference		7.9	(7.0-8.7)	Reference	
	Female	19.9	(16.9-23.0)	1.7	(1.1-2.5)	9.9	(8.2-10.6)	1.3	(1.1-1.5)
Age group	18-44	17.2	(13.0-21.3)	Reference		9.4	(8.3-10.4)	Reference	
	45-64	19.1	(16.2-22.0)	1.3	(0.9-1.9)	9.6	(8.9-10.3)	1.2	(1.0-1.4)
	65+	10.0	(7.4-12.5)	0.7	(0.3-1.4)	6.2	(5.6-6.9)	0.7	(0.6-0.9)
Income	<\$25,000	30.8	(25.8-35.7)	3.3	(2.0-5.4)	15.8	(14.3-17.2)	2.1	(1.6-2.6)
	\$25,000-\$49,999	10.1	(7.2-13.1)	1.2	(0.7-2.0)	8.0	(7.1-8.9)	1.3	(1.0-1.6)
	≥\$50,000	8.4	(5.6-11.2)	Reference		5.6	(4.8-6.4)	Reference	
Race	White	16.3	(13.8-18.6)	Reference		8.3	(7.8-8.9)	Reference	
	American Indian	18.8	(11.6-26.1)	0.5	(0.3-0.9)	14.0	(11.6-16.4)	0.9	(0.7-1.2)
Education	≤HS education	21.6	(17.5-25.6)	1.2	(0.8-1.7)	11.2	(10.2-12.2)	1.1	(1.0-1.3)
	>HS education	12.8	(10.5-15.1)	Reference		7.4	(6.8-8.0)	Reference	
Body mass index	Not overweight or obese	15.3	(10.6-20.1)	Reference		8.1	(7.2-9.0)	Reference	
	Overweight or obese	16.8	(14.3-19.3)	1.5	(0.99-2.4)	9.4	(8.7-10.1)	1.3	(1.1-1.6)
Marital status	Partnered	13.1	(10.7-15.4)	1.1	(0.8-1.6)	7.4	(6.9-8.0)	1.3	(1.0-1.5)
	Single	22.1	(17.8-26.4)	Reference		12.1	(10.9-13.4)	Reference	
Employment status	Working	11.1	(8.7-13.5)	Reference		7.1	(6.5-7.8)	Reference	
	Not working	31.0	(25.3-36.6)	2.0	(1.4-3.0)	16.4	(14.6-18.1)	2.2	(1.8-2.6)
	Retired	9.5	(6.4-12.5)	0.8	(0.4-1.6)	6.0	(5.3-6.7)	1.0	(0.8-1.2)
Smoking status	Current	32.7	(26.2-39.2)	2.4	(1.6-3.6)	17.8	(15.9-19.7)	2.1	(1.7-2.5)
	None	11.5	(8.6-13.5)	Reference		6.9	(6.4-7.5)	Reference	

\*Adjusted for all listed variables

AOR=Adjusted odds ratio HS=High School CI=Confidence Interval

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#### References

1. National Heart Lung and Blood Institute (US). Expert Panel Review-3 Guidelines to Asthma Management. National Institutes of Health (US); 2007 Aug. NIH Pub. Available at: <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>
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## Clinical Recommendations

- Assess stress, anxiety, depression and overall quality of life among patients, especially those with asthma.
- Refer the patient to a licensed mental health professional when appropriate, e.g. when mental health issues seem to interfere with daily asthma management.
- Consider the potential role of psychosocial factors in patients whose asthma is not well controlled.
- Provide and reinforce self-management education for patients with asthma to improve quality of life.

## Report Highlights: Mental Health and Asthma

- Adults with current asthma reported factors related to poor health-related quality of life more frequently than did adults without asthma.
- The prevalence of frequent mental distress was higher among adults with current asthma than among those without current asthma in most demographic and socioeconomic subgroups.